

## LETTER

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### HARRIS'S HAWK DIES AFTER COLLIDING WITH MOTOR VEHICLE

The extent to which raptors are killed on roads may depend on a variety of biotic and abiotic factors (e.g., hunting habits, dispersal behavior, vehicular traffic, motor speed). Vehicle mortality is a main source of mortality in populations of Barn Owl, *Tyto alba*, (Newton et al. 1999, Mortality causes in British Barn Owls (*Tyto alba*), based on 1101 carcasses examined during 1963–1996. Pages 299–307 in J.R. Duncan, D.H. Johnson, and T.H. Nicholls [Eds.], *Biology and Conservation of Owls of the Northern Hemisphere*, Second International Symposium, U.S. Department of Agriculture, St. Paul, MN U.S.A.) and Red-tailed Hawk, *Buteo jamaicensis* (Keran 1981, *Raptor Res.* 15:108–112). Motor collision deaths have also been reported in large, diurnal raptors such as the Ferruginous Hawk, *B. regalis*, (Bechard and Schmutz 1995, In A. Poole and F. Gill, [Eds.], *The birds of North America*, No. 172. The Academy of Natural Sciences, Philadelphia, PA and the American Ornithologists' Union, Washington, DC U.S.A.), Red-shouldered Hawk, *B. lineatus*, (Keran 1981), and Broad-winged Hawk, *B. platypterus* (Loos and Kerlinger 1993, *J. Raptor Res.* 27:210–213). Nocturnal hunting habits may increase some species' risk of colliding with motor vehicles. For example, bright headlights may temporarily blind owls hunting at night. In support of this idea, the frequency of road mortality in the Little Owl (*Athene noctua*) was slightly lower (2.3%) along illuminated roads (Hernandez 1988, *J. Raptor Res.* 22: 81–84). Species that habitually scavenge road-killed animals are more likely to die due to collisions (Brown and Amadon 1968, *Eagles, hawks, and falcons of the world*, Vol. I. McGraw-Hill Book Co., New York, NY U.S.A.). Within species, certain age and gender classes may be more prone to this type of mortality; specifically, young birds undergoing post-fledging dispersal may be more susceptible to vehicular collisions (Hernandez 1988, Loos and Kerlinger 1993, Massemin et al. 1998, *Ibis* 140:70–75). Poor body condition may increase the likelihood of being struck by a vehicle. However, the body condition of road-killed carcasses compared to captive immature Barn Owls fed *ad libitum* differed only for mature females (Massemin et al. 1998). The type of roadside vegetative cover and available perch height may also contribute to the likelihood that a raptor may be killed on the road (Hernandez 1988). Newton et al. (1999) documented an increase in the proportion of mortality due to collision with vehicles over time in the Barn Owl. They attributed this increase to the construction of more roads, increased traffic volume, and higher vehicle speeds. The extent to which the susceptible raptor species are killed by vehicles may warrant further study where highway infrastructure is expanding.

Quantitative data on the causes for mortality in the Harris's Hawk (*Parabuteo unicinctus*) are lacking (Bednarz 1995, In A. Poole and F. Gill [Eds.], *The birds of North America*, No. 146. The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, DC U.S.A.). Documented cases of mortality in fledged and adult Harris's Hawks include deaths by shooting, Great Horned Owl (*Bubo virginianus*) predation, illegal trapping (Bednarz 1995), electrocution, probable drowning in livestock water tanks, and injuries sustained from cholla cactus (*Opuntia* sp.) that probably would have been fatal had not the researcher intervened (Whaley 1986, *Raptor Res.* 20: 1–15). We provide the first report of a Harris's Hawk dying from collision with a motor vehicle.

On 22 November 2002, we found a dead adult female Harris's Hawk on the ground, 10 m from U.S. Highway 287, Electra, Wichita County, Texas. The hawk had been dead for ca. 3 d. The body lay prostrate, with the head facing away from the road and the tail pointing upward, emerging above the grass, and directed toward the road. The bird was at least 3 yr old judging from its plumage of only adult feathers from two different years (some rectrices and remiges were extremely worn and faded while others were bright and intact). We examined the specimen and found a compound fracture at the proximal end of the left humerus; the humerus was broken in two pieces. The bird appeared to have been in very fit condition. Pectoral muscles protruded on either side of the keel, and a layer of subcutaneous fat covered much of the abdomen. The location of the bird and the nature of its injury implied that it died after colliding with a motor vehicle; there was no other structure nearby with which the bird could have collided.

Also of interest is the location of this specimen outside the reported breeding range. The nearest published population of Harris's Hawks is ca. 290 km away (Bednarz 1995). We did not search the area for additional Harris's Hawks. The habitat consisted of 3–4 m high mesquite (*Prosopis glandulosa*) and appeared to be suitable for the species (Bednarz 1995).

The frequency of Harris's Hawk deaths from collisions with motor vehicles is probably very low (J. Bednarz and

W. Whaley pers. comm.). Harris's Hawks rarely feed on road-killed animals. During his 10-yr study in southeastern New Mexico, J. Bednarz observed only two instances of scavenging, and both involved immature birds in late winter or early spring. The Harris's Hawk's apparent avoidance of road killed animals probably reduces its risk of motor vehicle collision (J. Bednarz pers. comm.). Nonetheless, Harris's Hawks often perch on utility poles and wires, fence posts, and signs along roads. Typical quarry are ground-dwelling mammals and generally low-flying birds associated with scrub (Bednarz 1995). Thus, collision with motor vehicles seems a likely source of mortality for populations of Harris's Hawks living around humans. Moreover, we predict that the frequency of such deaths will increase as Harris's Hawk habitats become more developed by humans.

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